

### REMARKS

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Prior to this amendment being entered claims 1-3, 11, 12, and 58-72 were pending.

Claims 1-3 and 12 are drawn to non-elected subject matter and are requested to be canceled. After this amendment is entered, claims 11 and 58-72 are pending in this application.

Claims 60, 62, 71, and 72 are withdrawn from consideration. However, claims 60, 62, 71, and 72 depend from elected independent claims and recite methods of use for compositions recited in the elected independent claims. As such, Applicants request that claims 60, 62, 71, and 72 be rejoined in the prosecution should the Examiner determine that the elected independent claims are allowable. *See* M.P.E.P. § 821.04 Rejoinder (“However, if applicants elect claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined.”).

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

#### Claim Objections

In the Office Action dated May 11, 2004, the Examiner objected to claims 11, 58-59, 61 and 63-70 as being dependent on non-elected claim 1. Applicants have amended claim 11 and the amended claims do not depend from any non-elected claims. Applicants request that the Examiner withdraw the objection.

Defective Declaration

In the Office Action, the Examiner asserted that the Declaration is defective because inventor Neil C. Corley's residence and P.O. address were altered without being initialed and dated. Applicants have enclosed a new Declaration herewith.

Rejections Under 35 U.S.C. § 112, Second Paragraph

In the Office Action, the Examiner rejected claims 61 and 63-68 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. In particular, the Examiner contended that the term "specificity" recited in claims 63 and 66 is "ambiguous and unclear." Applicants have amended claims 63 and 66 to remove the term "specificity." As amended, claims 63 and 66 recite a polyclonal or monoclonal antibody, respectively, "which specifically binds to a polypeptide of SEQ ID NO:1."

The Examiner also stated that "claim 61 has no antecedent basis in base claim 59," where claim 61 recites "wherein the antibody is labeled." Applicants have amended claim 61 to recite "further comprising a label covalently or non-covalently attached to the antibody." As such, Applicants respectfully request that the Examiner reconsider and withdraw the rejections under 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. § 112, First Paragraph, for Lack of Enablement

The Examiner rejected claims 11, 58-59, 61 and 63-70 under 35 U.S.C. § 112, first paragraph, stating that the specification "while being enabling for an antibody which specifically binds to a polypeptide of SEQ ID NO:1, does not reasonably provide enablement for any antibody which specifically binds to" the polypeptide as recited in claim 1(b) or the fragments as recited in claim 1(c-d).

Applicants respectfully disagree that the specification does not “reasonably provide enablement for any antibody which specifically binds to the polypeptide as recited in claim 1(b) or the fragments as recited in claim 1(c-d). However, Applicants thank the Examiner for indicating that the specification is enabling for an antibody “which specifically binds to a polypeptide of SEQ ID NO:1,” and to facilitate prosecution, Applicants have amended claim 11 to recite an “isolated antibody which specifically binds to a polypeptide of SEQ ID NO:1.” As such, Applicants request that the Examiner reconsider and withdraw the rejection under 35 U.S.C. § 112, first paragraph, for lack of enablement.

Rejections Under 35 U.S.C. § 112, First Paragraph, Inadequate Written Description

The Examiner rejected claims 11, 58-59, 61 and 63-70 under 35 U.S.C. § 112, first paragraph, “as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.” The Examiner stated that “Applicant is in possession of enabling for an antibody which specifically binds to a polypeptide of SEQ ID NO:1.” Applicants assume that the Examiner meant to state that “the specification provides an adequate written description [and is enabling] for an antibody which specifically binds to a polypeptide of SEQ ID NO:1.” As such, Applicants have amended claim 11 to recite an “isolated antibody which specifically binds to a polypeptide of SEQ ID NO:1.” In addition, Applicants have amended claims 63 and 66 to recite a polyclonal or monoclonal antibody, respectively, “which specifically binds to a polypeptide of SEQ ID NO:1.” Therefore, Applicants request that the Examiner reconsider and withdraw the rejection under 35 U.S.C. § 112, first paragraph, for inadequate written description.

Rejections under 35 U.S.C. § 103(a)

The Examiner rejected all the claims as being unpatentable over Miyamoto *et al.* in view of various references including Campbell, Bost *et al.*, Harlow, and Owens *et al.* Applicants respectfully traverse the rejections because Miyamoto *et al.*, either alone or in combination with the other cited references, does not render obvious the subject recited in independent claims 11, 63, or 66. As amended, claims 11, 63, and 66 recite:

11. (Currently Amended) An isolated antibody which specifically binds to a polypeptide of SEQ ID NO:1.

63. (Currently Amended) A method of preparing a polyclonal antibody which specifically binds to a polypeptide of SEQ ID NO:1, the method comprising:

a) immunizing an animal with a polypeptide having an amino acid sequence of SEQ ID NO:1, or an immunogenic fragment consisting of at least 14 contiguous amino acids of SEQ ID NO:1, under conditions to elicit an antibody response...

66. (Currently Amended) A method of making a monoclonal antibody which specifically binds to a polypeptide of SEQ ID NO:1, the method comprising:

a) immunizing an animal with a polypeptide having an amino acid sequence of SEQ ID NO:1, or an immunogenic fragment consisting of at least 14 contiguous amino acids of SEQ ID NO:1, under conditions to elicit an antibody response...

As stated by the Examiner:

Miyamoto *et al.* teach a mouse  $\text{Ca}^{2+}$  binding protein (CBP), MO25, comprising [] 341 amino acids, which has 81% identity to claimed SEQ ID NO:1....The reference protein of the MO25 compris[es] several fragments that ha[ve] consecutive amino acids that are 100% identical to fragments of [the] claimed protein of SEQ ID NO:1.

Further, the Examiner stated:

Antibodies “cross-react” with antigens with homologous [sic] amino acid residues. Although Miyamoto *et al.* does not teach [the] specific amino acid sequence of SEQ ID NO:1, ***binding to “SEQ ID NO:1” is considered and inherent property of the reference antibody.***

Therefore, the Examiner contends that antibodies to the protein disclosed by Miyamoto *et al.* ***inherently will cross-react with a polypeptide of SEQ ID NO:1.*** Applicants respectfully disagree.

Under M.P.E.P. § 1212, an “Examiner must provide a rationale or evidence tending to show inherency.” However, “[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. *The mere fact that a certain thing may result from a given set of circumstances is not sufficient*.”” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). “In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

Therefore, the mere fact that antibodies to the protein disclosed by Miyamota *et al.* may cross-react with a polypeptide of SEQ ID NO:1 is insufficient to establish inherency. As noted above, “[i]nherency...may not be established by probabilities or possibilities.” To establish inherency, antibodies to the protein disclosed by Miyamota *et al.* must always cross-react with the polypeptide of amino acid sequence SEQ ID NO:1. The Examiner has not established this fact.

The MO25 protein is not identical to a polypeptide of SEQ ID NO:1, the two proteins having only approximately 80% amino acid identity. In the Office Action dated May 11, 2004, at page 4, the Examiner stated that “Colman *et al.*...teach single amino acid changes in an antigen can effectively abolish antibody antigen binding activity.” Further, the Examiner stated that “Lederman *et al.*...disclose that a single amino acid substitution in a common allele ablates binding of a monoclonal antibody.”

The Examiner also stated that "[t]he reference protein of the MO25 compris[es] several fragments that ha[ve] consecutive amino acids that are 100% identical to fragments of [the] claimed protein of SEQ ID NO:1." However, the Examiner has not established that these identical fragments comprise *identical epitopes* of MO25 and SEQ ID NO:1 to which antibodies will cross-react.

Therefore, in view of the above-stated reasons, Applicants respectfully contend that the Examiner has not established inherency by showing that antibodies to the MO25 protein *will necessarily* cross-react with the polypeptide of SEQ ID NO:1. Applicants respectfully request that the Examiner reconsider and withdraw the rejections under 35 U.S.C. § 103(a) over Miyamota *et al.*

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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